

<b>Location: Drumshanbo, Co. Leitrim</b>		<b>Unique ID: 260459</b> (from PFRA database)	
<b>Initial OPW Designation</b>	<b>APSR</b> <input checked="" type="checkbox"/>	<b>AFRR</b> <input type="checkbox"/>	<b>IRR</b> <input type="checkbox"/>
<b>Co-ordinates</b>	<b>Easting: 197322</b>	<b>Northing: 310923</b>	
<b>River / Catchment / Sub-catchment</b>	<b>Aghagrania River / Shannon</b>		
<b>Type of Flooding / Flood Risk</b> (identify all that apply)	<b>Fluvial non-tidal</b> <input checked="" type="checkbox"/> <b>Fluvial tidal</b> <input type="checkbox"/> <b>Coastal</b> <input type="checkbox"/>		

<b>Stage 1: Desktop Review</b>	
<b>1.1 Flood History (include review of Floodmaps.ie)</b>	<p><b>River Flow Path</b></p> <p>The Aghagrania River flows through Drumshanbo and meanders westerly to the river's confluence with Lough Allen and the River Shannon.</p> <p>There are several crossings of the Aghagrania River within the town of Drumshanbo, namely; the R208 at High Street and Church Street, Carrick Road, the Dowra Road (R207).</p> <p><b>Flood Event Records</b></p> <p>Two flood records are listed in floodmaps.ie, dated November 1999 and December 1954.</p>
<b>1.2 Relevant information on flooding issues from OPW and LA staff</b>	<p><b>PFRA database comments (<i>in italics</i>):</b></p> <p><b>OPW comments</b> <i>Designated APSR on the basis of predictive analysis and LA comments. Recommended by LA for Risk Review, not APSR Approved - APSR Maintain as APSR and Risk Review (as required for all APSRs) can confirm status</i></p> <p><b>LA comments</b> <i>Commercial including one hotel and some residential properties. The source is Lough Allen, which the River Shannon passes through. The frequency is approx every 5 years and also after very heavy rainfall. One small area in 2009-just access to hotel, but there is an alternative access. Risk review. Maps describing Drumshanbo lands liable to flooding (2010) provided by LA.</i></p> <p><b>Meeting / discussion summary comments:</b></p> <p><b>OPW comments</b></p> <ul style="list-style-type: none"> <li>OPW not familiar with the site, no information was provided.</li> </ul> <p><b>LA comments</b></p> <ul style="list-style-type: none"> <li>Unaware of any flood risk in Drumshanbo.</li> <li>There is a new hotel on the banks of Lough Allen which may be at risk of flooding.</li> </ul>

<b>1.4 PFRA Data</b>			
<b>1.4.1 PFRA hazard mapping</b>	PFRA mapping available in GIS layer:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	PFRA mapping included on FRR map:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<b>1.4.2 Summary of Principal Receptors</b>	<b>Type</b>	<b>FRI score (if available)</b>	
	Garda Station	25	
	Arch_Local	10	
	Arch_Regional	53	
	Monument_LV	30	
	<b>Total</b>	<b>505.5</b>	
<b>1.7 Stage 1 Evaluation</b>	<b>Aspect</b>	<b>Clearly APSR</b>	<b>Uncertain</b>
	Flood History (1.1)	X	
	OPW / LA Information (1.2)		X
	PFRA Evaluation (1.4)	X	
	Overall Desktop Evaluation (if any above aspect is uncertain then overall designation is uncertain)		X
<b>1.8 Proposed level of assessment for Stage 2 site visits</b>	<b>Level A Site Visit</b>	X	
	<b>Level B Site Visit</b>		

<b>Stage 2: Site Inspection</b>		<b>Level A Assessment</b>		
<b>Date and Time of Inspection</b>		<b>Date: 27/04/11</b>		
		<b>Time: 16:00</b>		
<b>Names of inspection team (including OPW/LA staff if present)</b>		<b>Mathieu Valois</b>		
		<b>James Murray</b>		
<b>2.1 Ground-truthing of Hazard Mapping</b>	<b>Fluvial non-tidal</b> <input checked="" type="checkbox"/> <b>Fluvial tidal</b> <input type="checkbox"/> <b>Coastal</b> <input type="checkbox"/> <b>Not available</b> <input type="checkbox"/>			
	The PFRA hazard mapping provides a good initial outline. However, it is likely that the flood risk indicated by the mapping maybe slightly overestimated.			
<b>2.2 Spot check ground-truthing of selected receptor vulnerability</b>  <b>(also note any key receptors noted during visit that are not identified by PFRA)</b>	<b>Receptor Type</b>	<b>Location description (if not obvious)</b>	<b>Exists?</b>	<b>Overall Vulnerability / Risk (L / M / H)</b>
	Garda Station	As located on map	Yes	Medium
	Arch_Local and Arch_Regional	Amongst others a small church on river bank in village centre	Yes	Medium
	Monument_LV	On tributary north west of town – not visited		
	Gala shop	At downstream end of town right bank	Yes	Medium
	Commercial and residential properties	Downstream of town left bank.	Yes	Medium
	Hotel	North west of town on the bank of Lough Allen	Yes	Medium
<b>2.3 Local knowledge - on-site comments (OPW, LA and any info volunteered by local residents during visit)</b>	No on-site comments.			
<b>2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes</b>	Several culverts through the town which are all of large capacity, would not cause constrictions to flows unless blocked. There is significant vegetation on the banks and the water is fast flowing so could potentially pull debris into the river. Risk of blockage to these culverts is exacerbated by the fast flowing nature of this steep river.			

2.5 SVRS Assessment Matrix												
<b>Weightings:</b> <b>A - x1 - reasonable expectation of flooding</b> <b>B - x2 - high expectation of flooding</b> <b>C - x5 - risk to life</b>												
Approx. Number	1 to 4			5 to 20			>20					
Weighting	A	B	C	A	B	C	A	B	C			
Property (domestic)	10				100		X		200			
Property (small retail or business)	20		X		200				400			
Property (large retail or business)	50				500				1000			
Road or Rail Infrastructure	30		X		300				600			
Critical Infrastructure (local) [hospital, school, police/fire/ambulance station, substation, WTW/WWTW, gov bldg, other (specify)]	50				500				1000			
Critical Infrastructure (national importance)	250				1000				2000			
Cultural Heritage Site	20		X		200				400			
Environmental Designated Site	20				200				400			
Hazardous Substances Site	50				500				1000			
<b>Total SVRS</b>							<b>340</b>					
2.6 Defence Assets												
<b>Formal and Informal Flood Defence Assets</b> <i>(include effective and ineffective assets to inform asset survey and potential mitigation measures)</i>	<b>Open Channel Watercourses</b> Man-made river channel <input checked="" type="checkbox"/> Flood relief channel <input type="checkbox"/> Canal <input type="checkbox"/> Mill leat <input type="checkbox"/> Drainage channels / back drains <input type="checkbox"/>											
	<b>Bridges and Culvert crossings</b> Single Arch bridge <input type="checkbox"/> Multi-Arch bridge <input type="checkbox"/> Single Span bridge <input type="checkbox"/> Multi-Span bridge <input type="checkbox"/> Box culvert(s) <input checked="" type="checkbox"/> Pipe culvert(s) <input checked="" type="checkbox"/> Arch Culvert(s) <input type="checkbox"/>											
	<b>Culverted Watercourses</b> (culvert length is greater than just a crossing) Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input checked="" type="checkbox"/> Arch Culvert(s) <input type="checkbox"/> Irregular Culvert(s) <input type="checkbox"/>											
	<b>Walls and Embankments</b> Embankment(s) <input type="checkbox"/> Raised wall(s) <input checked="" type="checkbox"/> Retaining wall(s) <input type="checkbox"/>											
	<b>Control Structures – weirs, gates, dams</b> Fixed crest weir <input type="checkbox"/> Adjustable weir <input type="checkbox"/> Dam / Barrage <input type="checkbox"/> Sluice gates <input type="checkbox"/> Lock gates <input type="checkbox"/> Radial gates <input type="checkbox"/>											
	<b>Storage</b> On-line storage (natural) <input type="checkbox"/> On-line storage (artificial) <input type="checkbox"/> Off-line storage <input type="checkbox"/>											
	<b>Outfalls</b> Flapped outfall(s) into watercourse <input type="checkbox"/> Unflapped outfall(s) into watercourse <input type="checkbox"/> <i>i.e. from smaller watercourses, drains etc. into river / estuary / sea</i> Tidal flap(s) <input type="checkbox"/> Tidal sluice(s) <input type="checkbox"/> <i>i.e. from main watercourse into estuary / sea</i>											

	<p><b>Other</b>  Pumping Station <input type="checkbox"/> Erosion Protection <input type="checkbox"/> Sand Dunes <input type="checkbox"/></p> <p><b>Additional notes (if required):</b>  Some walls throughout the town are acting as informal flood defences. These walls are sporadically placed and their effectiveness as a flood defence is questionable.</p>
<p><b>2.8 Initial Potential Mitigation Measures</b></p>	
<p><b>Non-structural measures</b></p>	<p>Planning and Development control <input type="checkbox"/>  Sustainable Urban Drainage Systems <input type="checkbox"/>  Flood forecasting / warning <input type="checkbox"/>  Change in Operating Procedures for water level control: <input type="checkbox"/>  Public awareness campaign <input checked="" type="checkbox"/>  Individual property protection <input checked="" type="checkbox"/>  Land use management <input type="checkbox"/></p>
<p><b>Structural measures</b></p>	<p><b>Strategic development management for floodplain development:</b> <input type="checkbox"/>  <i>(integration of measures into strategic development proposals)</i></p> <p><b>Storage:</b> On-line <input type="checkbox"/> Off-line <input type="checkbox"/></p> <p><b>Flow diversion:</b> Flood relief channel <input type="checkbox"/> Flood relief culvert <input type="checkbox"/></p> <p><b>Increase conveyance:</b> Bridge works <input checked="" type="checkbox"/> Channel works <input checked="" type="checkbox"/> Floodplain <input type="checkbox"/></p> <p><b>Flood defences:</b> Walls <input checked="" type="checkbox"/> Embankments <input checked="" type="checkbox"/></p> <p><b>Localised works:</b> Defence raising <input type="checkbox"/> In-fill gaps <input type="checkbox"/> Trash screen <input type="checkbox"/></p> <p><b>Maintenance works:</b> Culvert / channel clearance <input checked="" type="checkbox"/> Asset maintenance <input checked="" type="checkbox"/></p> <p><b>Relocation of properties:</b> <input type="checkbox"/></p> <p><b>Improve existing defences:</b> <input type="checkbox"/> (describe)</p> <p><b>Other (describe):</b></p>

<b>Outcomes</b>				
<b>PFRA Designation</b>	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>			<b>FRI Score: 505.5</b>
<b>Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</b>	<b>High Confidence (good)</b>	<b>Uncertain</b>	<b>Low Confidence (poor)</b>	<b>Not available</b>
		<b>X</b>		
<b>Site Visit Review Score</b>	<b>340</b>			
<b>Recommended Designation</b>	APSR <input checked="" type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input type="checkbox"/>			
<b>Summary Comments (if required)</b>	<p>The risk of flooding in Drumshanbo is greatest through the culverted reaches of the Aghagrana River. There is a culverted section of watercourse at the top of the town that has a capacity significantly less than the main river channel. The risk of blockage to this culvert, and consequential flood impacts, is significant. If flooding were to occur in the town and there would be little or no warning due to the very steep catchment area.</p> <p>The new hotel is situated some distance from Drumshanbo on the banks of Lough Allen. The hotel building is raised out of the floodplain and not at risk; however the access road and car park are potentially at risk.</p>			



**Photo1:** Watercourse near church at Drumshanbo



**Photo 2:** Watercourse in Drumshanbo downstream of church



**Photo 3:** Watercourse at Drumshanbo, downstream of town centre



**Photo 4:** Inlet Culvert upstream of the Church in Photo 1

